

## WHAT IS CLAIMED IS:

1           1.    A MPEG decoder having a controller that detects start  
2 codes in bitstreams received in said MPEG decoder, each of said  
3 start codes having a three-byte start code prefix and a one-byte  
4 start code value, said controller operable to (i) fetch a thirty-  
5 two bit word of a received bitstream, (ii) determine whether a  
6 start code prefix and a start code value are properly aligned  
7 within said thirty-two bit word, and (iii) if not properly aligned  
8 within said thirty-two bit word, determine whether the least  
9 significant byte of said thirty-two bit word may be part of said  
10 start code prefix.

1           2.    The MPEG decoder as set forth in Claim 1 wherein said  
2 controller is further operable, if not part of said start code  
3 prefix, to fetch another thirty-two bit word of said received  
4 bitstream.

1           3.    The MPEG decoder as set forth in Claim 2 wherein said  
2 controller is further operable to (iv) determine whether said start  
3 code prefix is within the three least significant bytes of said  
4 thirty-two bit word.

1           4.    The MPEG decoder as set forth in Claim 2 wherein said  
2   controller is further operable to (iv) determine whether part of  
3   said start code prefix may be within the most significant byte of  
4   a next thirty-two bit word.

1           5.    The MPEG decoder as set forth in Claim 4 wherein said  
2   controller is further operable to fetch said next thirty-two bit  
3   word of said received bitstream.

1           6.    The MPEG decoder as set forth in Claim 4 wherein said  
2   controller is further operable to (v) determine whether part of  
3   said start code prefix is within the two least significant bytes of  
4   said thirty-two bit word and the most significant byte of said next  
5   thirty-two bit word.

1           7.    The MPEG decoder as set forth in Claim 4 wherein said  
2   controller is further operable to (v) determine whether part of  
3   said start code prefix is within the least significant byte of said  
4   thirty-two bit word and the two most significant bytes of said next  
5   thirty-two bit word.

1           8.    A digital video recorder capable of playing back a  
2    recorded program stream, said digital video recorder comprising:

3               a video processor capable of receiving an incoming  
4    program stream and converting said incoming program stream to a  
5    baseband signal capable of being displayed on a television  
6    associated with said digital video recorder;

7               a storage disk capable of storing program streams for  
8    time-shifted viewing; and

9               a MPEG decoder capable of decoding received bitstreams  
10   and generating PES packets, said MPEG decoder having a controller  
11   that detects start codes in said received bitstreams, each of said  
12   start codes having a three-byte start code prefix and a one-byte  
13   start code value, said controller operable to (i) fetch a thirty-  
14   two bit word of a received bitstream, (ii) determine whether a  
15   start code prefix and a start code value are properly aligned  
16   within said thirty-two bit word, and (iii) if not properly aligned  
17   within said thirty-two bit word, determine whether the least  
18   significant byte of said thirty-two bit word may be part of said  
19   start code prefix.

1           9. The digital video recorder as set forth in Claim 8  
2 wherein said controller is further operable, if not part of said  
3 start code prefix, to fetch another thirty-two bit word of said  
4 recorded bitstream.

1           10. The digital video recorder as set forth in Claim 9  
2 wherein said controller is further operable to (iv) determine  
3 whether said start code prefix is within the three least  
4 significant bytes of said thirty-two bit word.

1           11. The digital video recorder as set forth in Claim 9  
2 wherein said controller is further operable to (iv) determine  
3 whether part of said start code prefix may be within the most  
4 significant byte of a next thirty-two bit word.

1           12. The digital video recorder as set forth in Claim 11  
2 wherein said controller is further operable to fetch said next  
3 thirty-two bit word of said received bitstream.

1           13. The digital video recorder as set forth in Claim 11  
2 wherein said controller is further operable to (v) determine  
3 whether part of said start code prefix is within the two least  
4 significant bytes of said thirty-two bit word and the most  
5 significant byte of said next thirty-two bit word.

1           14. The digital video recorder as set forth in Claim 11  
2 wherein said controller is further operable to (v) determine  
3 whether part of said start code prefix is within the least  
4 significant byte of said thirty-two bit word and the two most  
5 significant bytes of said next thirty-two bit word.

1           15. A method of detecting start codes in bitstreams received  
2           in a MPEG decoder, each of said start codes having a three-byte  
3           start code prefix and a one-byte start code value, said method  
4           comprising the steps of:

5                   (i) fetching a thirty-two bit word of a received  
6           bitstream;

7                   (ii) determining whether a start code prefix and a start  
8           code value are properly aligned within said thirty-two bit word;  
9           and

10                   (iii) if not properly aligned within said thirty-two bit  
11           word, determining whether the least significant byte of said  
12           thirty-two bit word may be part of said start code prefix.

1           16. The method as set forth in Claim 15 further comprising  
2           the step of (iv) determining whether said start code prefix is  
3           within the three least significant bytes of said thirty-two bit  
4           word.

1           17. The method as set forth in Claim 15 further comprising  
2 the step of (iv) determining whether part of said start code prefix  
3 may be within the most significant byte of a next thirty-two bit  
4 word.

1           18. The method as set forth in Claim 17 further comprising  
2 the step of fetching said next thirty-two bit word of said received  
3 bitstream.

1           19. The method as set forth in Claim 15 further comprising  
2 the step of (v) determining whether part of said start code prefix  
3 is within the two least significant bytes of said thirty-two bit  
4 word and the most significant byte of a next thirty-two bit word.

1           20. The method as set forth in Claim 15 further comprising  
2 the step of (v) determining whether part of said start code prefix  
3 is within the least significant byte of said thirty-two bit word  
4 and the two most significant bytes of a next thirty-two bit word.